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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,804	05/18/2006	Sachiko Kawakami	0756-7698	3461
31780	7590	02/03/2009	EXAMINER	
ERIC ROBINSON			HO, ANTHONY	
PMB 955				
21010 SOUTHBANK ST.			ART UNIT	
POTOMAC FALLS, VA 20165			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,804	Applicant(s) KAWAKAMI ET AL.	
	Examiner ANTHONY HO	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 6 and 8-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 7 and 17-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :5/18/2006, 7/12/2006, 10/17/2008.

DETAILED ACTION

Election/Restrictions

Applicant's election of Group 3 (claims 5, 7, 17 and 18) in the reply filed on October 17, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-4, 6, and 8-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 17, 2008.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on May 18, 2006 was filed after the mailing date of the instant application on May 18, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement (IDS) submitted on July 12, 2006 was filed after the mailing date of the instant application on May 18, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement (IDS) submitted on October 17, 2008 was filed after the mailing date of the instant application on May 18, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

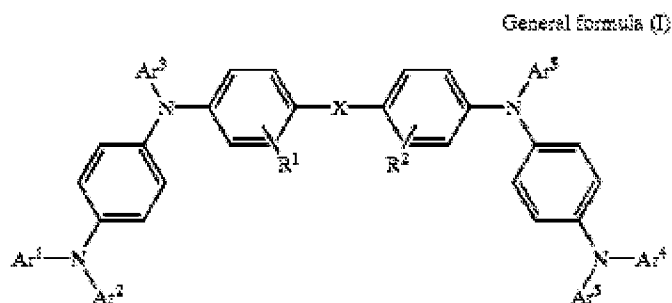
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 17-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al (US PUB 2003/0143430) in view of Danel et al, Chemical Materials, (2002), Vol. 14, p. 3860-3865 and Yamazaki et al (US PUB 2002/0050786).

In re claims 5 and 23, Kawamura et al. discloses organic electroluminescent devices comprising a phenylenediamine derivative in a layer (in this case, the first layer of the claimed invention) between electrodes, in addition to an organic light-emitting layer (in

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this case, the second layer of the claimed invention) (i.e. paragraph 0011). The phenylenediamine derivative may be according to general formula (I) (see par. 11):



Ar¹ to Ar⁶ may be an aryl group having 6 carbon atoms, which includes a phenyl group. X may be an arylene having from 6 to 24 nucleus carbon atoms, which includes an anthracene group.

Yamazaki et al discloses a third layer containing a substance having electron mobility of $10^{-6} \text{ cm}^2/\text{Vs}$ or more in an organic light emitting device (i.e. paragraph 0244).

The advantage is to lower carrier injection at the third layer/electrode interface. It would have been obvious to one of ordinary skill in the art to have modified the light emitting device as taught by Kawamura et al with a third layer containing a substance having electron mobility of $10^{-6} \text{ cm}^2/\text{Vs}$ or more as taught by Yamazaki et al in order to lower carrier injection at the third layer/electrode interface.

Kawamura et al. is silent with respect to teaching the arylene group X may be further substituted with a tert-butyl group.

Danel et al. teaches in analogous art blue-emitting anthracene diarylamines that comprise a tert-butyl group in the 2-position of the anthracene.

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Danel et al. teaches on page 3861, first column, that incorporating a tert-butyl group at the 2-position of a 9, 10 phenyl-substituted anthracene provides the benefit of suppressing the aggregation of planar anthracene segments and provides improved solubility of the compounds in common solvents. It would have been obvious to one of ordinary skill in the art to have incorporated the anthracene "X" portion of the Kawamura et al. compounds with a tert-butyl group, because one would expect the compound to still provide the same function and one would expect the benefits of improved solubility for manufacturing purposes and improved steric interactions.

In re claim 17, the recitation "a pixel or a light source" in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

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In re claim 18, the recitation “a display portion” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

In re claim 19, Kawamura et al discloses one of the electrodes includes indium tin oxide (i.e. paragraph 0237).

In re claim 20, Kawamura et al discloses one of the electrodes includes aluminum or magnesium (i.e. paragraph 0130).

Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al (US PUB 2003/0143430) in view of Danel et al, Chemical Materials, (2002), Vol. 14, p. 3860-3865 and Yamazaki et al (US PUB 2002/0050786) as applied to claim 5 above, and further in view of Bohler et al (US PUB 2001/0025956).

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Bohler et al discloses using a material such as vanadium oxide in an organic light emitting device (i.e. paragraph 0023).

The advantage is to reduce the energy barrier formed at the interface electrode/organic material (i.e. paragraph 0023).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the light emitting device as taught by Kawamura et al as modified by Danel et al and Yamazaki et al with using a material such as vanadium oxide in an organic light emitting device as taught by Bohler et al in order to reduce the energy barrier formed at the interface electrode/organic material.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al (US PUB 2003/0143430) in view of Danel et al, Chemical Materials, (2002), Vol. 14, p. 3860-3865 and Yamazaki et al (US PUB 2002/0050786) as applied to claim 5 above, and further in view of Toguchi et al (US PUB 2003/0062520).

Toguchi et al discloses using a material such as lithium fluoride in an organic light emitting device (i.e. paragraph 0061).

The advantage is to improve charge injection properties, prevent electrical breakdown or improve luminous efficiency (i.e. paragraph 0061).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the light emitting device as taught by Kawamura et al as modified by Danel et al and Yamazaki et al with using a material such as lithium fluoride in an organic light emitting device as taught by Toguchi et al in order to improve

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charge injection properties, prevent electrical breakdown or improve luminous efficiency.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Kawamura et al (US Patent 6,541,129)
- b. Thompson et al (US PUB 2002/0034656)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571)270-1432. The examiner can normally be reached on M-Th: 10:30AM-9:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. H./
Examiner, Art Unit 2815

/Jerome Jackson Jr./
Primary Examiner, Art Unit 2815